

STATUS OF CLAIMS

1-18 (Cancelled)

19. (New) A connector adapted for mounting to an electrical apparatus which can be moved through an earth borehole having either high pressure or high temperature, or both high temperature and high pressure, comprising:

an electrical conductor;

a metal body having first and second ends, and having a given length between said first and second ends, said metal body adapted to be connected to an electrical apparatus, said electrical conductor extending through said metal body, said metal body having an annulus surrounding the said electrical conductor along the entire given length of said metal body; and

an insulation seal in said annulus, said seal comprising, at least in part, a layer of glass surrounding said electrical conductor, said insulation seal at least partially insulating said metal body, thereby insulating said metal body from said electrical conductor, said glass having a melting point greater than 500°F.

20. (New) The connector according to Claim 19, wherein the coefficient of thermal expansion of the said metal body substantially matches the coefficient of thermal expansion of the said electrical conductor.

21. (New) The connector according to Claim 20, wherein the coefficient of thermal expansion of the glass layer substantially matches the coefficients of thermal expansion of the metal body and of the electrical conductor.

22. (New) The connector of Claim 19, wherein said insulation seal comprises at least one ceramic layer.

- 23.** (New) The connector according to Claim 22, wherein said layer of glass has first and second ends, and at least one ceramic layer comprises first and second ceramic layers, one such ceramic layer being at each end of said glass layer.
- 24.** (New) The connector according to Claim 22, wherein the coefficient of thermal expansion of said at least one ceramic layer substantially matches the coefficients of thermal expansion of the metal body, the electrical conductor and the glass layer.
- 25.** (New) The connector according to Claim 19, wherein said glass layer continues to insulate the electrical conductor from the metal body even when exposed to earth borehole pressures exceeding 30,000 psig.
- 26.** (New) The connector according to Claim 19, comprising in addition thereto, a thermoplastic jacket applied in an initial position over the electrical conductor and to one end of said metal body, and movable to a second, radially outwards position for sealing against the electrical apparatus when subjected to either high temperature or high pressure, or both high temperature and high pressure.
- 27.** (New) The connector of Claim 26, wherein said thermoplastic jacket is applied by overmolding or press-fitting said jacket over said metal body having the conductor extending therethrough.
- 28.** (New) The connector of Claim 26, wherein said thermoplastic jacket is comprised of an aromatic polyether ketone.

29. (New) The connector of Claim 26, wherein said thermoplastic material is selected from the group consisting of PEK, PEEK, PAEK, and PEKK and blends of PEK, PEEK, PAEK, and PEKK with other plastics, modifiers, extenders, and polymers.

30. (New) The connector of Claim 26, wherein said thermoplastic jacket is comprised of a thermoplastic that is non-hydrolyzable and resistant to high temperature wellbore fluids, acids, and solvents, maintains favorable dielectric properties and volume resistivity at high temperatures, and retains high viscosity at high temperature and pressure.

31. (New) A connector adapted for mounting to an electrical apparatus which can be moved through an earth borehole having either high pressure or high temperature, or both high temperature and high pressure, comprising:

a plurality of electrical conductors;

a metal body having first and second ends, and having a given length between said first and second ends, said metal body adapted to be connected to an electrical apparatus, each of said electrical conductors extending through said metal body, said metal body having a plurality of annulus surrounding said plurality of electrical conductors, respectively, each of said electrical conductors having its own annulus surrounding each of the said electrical conductors, respectively, along the entire given length of said metal body; and

an insulation seal in each said annulus, said seals each comprising, at least in part, a layer of glass surrounding said electrical conductors, respectively, insulating said metal body from said electrical conductors, each of said glass layers having a melting point greater than 500°F.

32. (New) A connector adapted for mounting to an electrical apparatus which can be moved through an earth borehole having either high pressure or high temperature, or both high temperature and high pressure, comprising:

an electrical conductor;

a metal body having first and second ends, and having a given length between said first and second ends, said metal body adapted to be connected to an electrical apparatus, said electrical conductor extending through said metal body, said metal body having an annulus surrounding the said electrical conductor along the entire given length of said metal body; and

an insulation seal in said annulus, said seal surrounding said electrical conductor having a length greater than said given length of said metal body, thereby insulating said metal body from said electrical conductor.

33. (New) The connector of Claim 32, wherein said insulation seal comprises glass or a ceramic material, or a combination of glass and ceramic material.

34. (New) The connector of Claim 32, wherein said insulation seal comprises a brazed metallized ceramic material.

35. (New) The connector of Claim 32, wherein said insulation seal comprises a glass ceramic or ceramic material, or a combination of a glass ceramic and ceramic material.

36. (New) The connector of Claim 32, wherein said insulation seal comprises glass.

37. (New) A connector adapted for mounting to an electrical apparatus which can be moved through an earth borehole having either high pressure or high temperature, or both high temperature and high pressure, comprising:

a plurality of electrical conductors;

a metal body having first and second ends, and having a given length between said first and second ends, said metal body adaptor to be connected to an electrical apparatus, each of said

electrical conductors extending through said metal body, each of said electrical conductors having an annulus surrounding the said electrical conductors, respectively, along the entire given

length of said metal body; and

an insulation seal in each said annulus, said seals surrounding said electrical conductors,

respectively, said seals each having a length greater than said given length of said metal body, thereby insulating said metal body from said electrical conductors.

38. (New) The connector of Claim 37, wherein each of said insulation seals comprises glass or a ceramic material, or a combination of glass and ceramic material.

39. (New) The connector of Claim 37, wherein each of said insulation seals comprises a brazed metallized ceramic material.

40. (New) The connector of Claim 37, wherein each of said insulation seals comprises a glass ceramic or a ceramic material, or a combination of a glass ceramic and ceramic material.

41. (New) The connector of Claim 37, wherein each of said insulation seals comprises glass.